REMARKS

Claims 1, 3, 5-8, 10-13, and 15-17 are pending in the application. Claims 2, 4, 9, and 14 have been canceled.

Drawings

The drawings have been objected to because the view numbers are not larger than the numbers used for reference characters.

The view numbers have been amended to overcome this objection. The Examiner is respectfully requested to reconsider and withdraw this objection.

Claim Objections

Claim 4 has been objected to as being of improper dependent claim form for failing to further limit the subject matter of a previous claim.

Claim 4 has been canceled.

The Examiner is respectfully requested to reconsider and withdraw this objection.

Claim Rejections - 35 U.S.C. § 112

Claims 7, 12, 14, and 15 have been rejected under 35 U.S.C. § 112, second paragraph, because of some informalities.

The terms "plainly" recited in claim 7 and "plain-" recited in claim 15 have been deleted to overcome this rejection.

Claim 12 has been amended to depend from claim 11 to overcome this rejection.

Claim 14 has been canceled.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

Embodiment of the Present Invention

One of the embodiments of the present invention is directed to a coolant for an air bag inflator that includes a cylindrical coolant body having a uniform thickness defined by an outer diameter and an inner diameter thereof and adapted to be disposed in a housing of the inflator for at least one of cooling and purifying gas discharged from the inflator. The coolant is formed by compressing a first end of a molded product made of wire rods in an axial direction thereof, and compressing a second end, opposing the first end, of the molded product along the axial direction, such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of the coolant closer to the first end and a radial pressure loss of the axially lower half portion of the coolant closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C.

Claim Rejections - 35 U.S.C. § 102

(a) Claims 1-5 and 7 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Fujisawa (USP 5,849,054). This rejection is respectfully traversed.

Claim 1 has been amended to include all of the limitations recited in claim 2.

With respect to claims 2 and 3, the Examiner acknowledges, in the Office Action, that Fujisawa does not explicitly disclose an absolute value of a difference between a radial pressure loss of the axial upper half portion of said coolant and a radial pressure loss of the axially lower half portion of the coolant being 10 mmH_20 or less at a flow rate of 250 liters per minute under and atmosphere of 20°C.

The Examiner, however, alleges that since upper half portion of the coolant is substantially identical to the lower half portion of the coolant, the radial pressure loss in the two half portions will be substantially identical and the absolute value of the difference between the pressure losses will inherently be less than 6 mmH_20 or less at a flow rate of 250 liters per minute under and atmosphere of 20°C. Applicants respectfully disagree.

Fujisawa discloses, in col. 4, lines 18-25, forming a compressed mesh unit 1 by: forming a cylindrical filter by forming a cylindrical multi-folded overlaid mesh 15; putting the mesh 15

into a mold 4; and compressing the mesh 15 from the top and bottom of the mold 4 to form a cylinder of 90 mm in inner diameter, 2.5 mm in thickness, and 20 mm in length.

As shown in Fig. 6(b'), however, the cross-section of an upper end and a lower end of the overlaid mesh 15 are not identical. More specifically, the upper end has a space, defined by cut-off surfaces 14, inside the overlaid mesh 15, and the bottom end has a concaved portion. Therefore, even when the overlaid mesh is compressed from the top and bottom, a radial pressure loss of the compressed mesh unit 1 at the top end and at the bottom end are not identical because the foregoing space and recess may still exist even after compression and thus, the cross section of the upper end and the lower end of the compressed mesh unit 1 may be different. Further, Fujisawa does not specifically state or imply that the first and second ends of the molded product are compressed, "such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of said coolant closer to the first end and a radial pressure loss of the axially lower half portion of said coolant closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 1.

Claims 3, 5, and 7, dependent on claim 1, are allowable at least for their dependency on claim 1.

Claims 2 and 4 have been canceled.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(b) Claim 1-5 and 7 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Zettel et al. (USP 6,277,166 B1). This rejection is respectfully traversed.

With respect to claims 2 and 3, the Examiner acknowledges, in the Office Action, that Zettel does not explicitly disclose an absolute value of a difference between a radial pressure loss of the axial upper half portion of said coolant and a radial pressure loss of the axially lower half portion of the coolant being 10 mmH_20 or less at a flow rate of 250 liters per minute under and atmosphere of 20°C.

The Examiner, however, alleges that since upper half portion of the coolant is substantially identical to the lower half portion of the coolant, the radial pressure loss in the two half portions will be substantially identical and the absolute value of the difference between the pressure losses will inherently be less than 6 mmH_20 or less at a flow rate of 250 liters per minute under and atmosphere of 20°C.

Zettel discloses, in Fig. 2A-2D, a cylindrical filter having a plurality of ribs formed on an outer surface thereof. Zettel also

states, in col. 5, lines 44-49, that "[T]o diminish the uneven compression, and thus uneven density, that is likely to occur, the 'work' end of the intermediate annulus is placed first into the mold so that it becomes the 'base' end in the next operation; that is, the intermediate article is flipped-over so that it is compressed from the opposite end than it was originally."

Zettel, however, has a plurality of ribs formed on the outer surface. Therefore, in Zettel the filter does not have "a uniform thickness," as recited in claim 1.

Moreover, it is well known that the pressure loss changes based on the thickness of the filter although the density of the filter is even. More specifically, a filter having a thickness of an inch has a larger redial pressure loss than a filter having the same density but a thickness of half of an inch.

Therefore, in Zettel, "an absolute value of a difference between a radial pressure loss of the axially upper half portion of said coolant closer to the first end and a radial pressure loss of the axially lower half portion of said coolant closer to the second end" is not intended to be "10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C" because the radial pressure loss is different between the portion where the rib exists and the portion where it does not.

Claims 3, 5, and 7, dependent on claim 1, are allowable at least for their dependency on claim 1.

Claims 2 and 4 have been canceled.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(c) Claims 8-10 and 12-14 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Fujisawa. This rejection is respectfully traversed.

Claim 8 is allowable at least for the similar reasons as stated in the foregoing with respect to claim 1. More specifically, Fujisawa does not disclose or even suggest compressing the first and second ends of the cylindrical molded product in the axial direction, "such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of the molded product closer to the first end and a radial pressure loss of the axially lower half portion of the molded product closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 8.

Claim 9 has been canceled.

Claims 10 and 12-13, variously dependent on claim 8, are allowable at least for their dependency on claim 8.

Claim 14 has been canceled.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(d) Claims 8-13 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Zettel. This rejection is respectfully traversed.

Claim 8 is allowable at least for the similar reasons as stated in the foregoing with respect to claim 1.

More specifically, Zettel does not disclose or even suggest the step of "compressing a first end of a cylindrical molded product having a uniform thickness defined by an outer diameter and an inner diameter thereof in an axial direction thereof," and the step of "compressing a second end of the cylindrical molded product in the axial direction, such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of the molded product closer to the first end and a radial pressure loss of the axially lower half portion of the molded product closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 8.

Claim 9 has been canceled.

Claims 10-13, variously dependent on claim 8, are allowable at least for their dependency on claim 8.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(e) Claim 16 has been rejected under 35 U.S.C. § 102(b) as being anticipated by Fujisawa. This rejection is respectfully traversed.

Claim 16, dependent on claim 1, is allowable at least for its dependency on claim 1.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(f) Claim 16 has been rejected under 35 U.S.C. § 102(e) as being anticipated by Zettel. This rejection is respectfully traversed.

Claim 16, dependent on claim 1, is allowable at least for its dependency on claim 1.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(g) Claim 17 has been rejected under 35 U.S.C. § 102(e) as being anticipated by Zettel. This rejection is respectfully traversed.

Claim 17, indirectly dependent on claim 1, is allowable at least for its dependency on claim 1.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

Claim Rejections - 35 U.S.C. § 103

(a) Claims 1 and 6 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Published Patent Application JP 10-119705 (hereinafter the JP '705) in view of Zettel. This rejection is respectfully traversed.

JP '705 merely discloses a cylindrical coolant but does not disclose or even suggest that the first end of the molded product is compressed, and the second end of the molded product is compressed, "such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of said coolant closer to the first end and a radial pressure loss of the axially lower half portion of said coolant closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 1.

As stated in the foregoing with respect to the claim rejections under Section 102, Zettel does not disclose or even suggest compressing first and second ends of the cylindrical molded product in the axial direction, "such that an absolute value of a

difference between a radial pressure loss of the axially upper half portion of the molded product closer to the first end and a radial pressure loss of the axially lower half portion of the molded product closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 1.

Therefore, even assuming, *arguendo*, that JP '705 and Zettel can be combined, JP '705 in view of Zettel fails to disclose or even suggest that the first end of the molded product is compressed, and the second end of the molded product is compressed, "such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of said coolant closer to the first end and a radial pressure loss of the axially lower half portion of said coolant closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 1.

Claim 6, dependent on claim 1, is allowable at least for its dependency on claim 1.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(b) Claims 8 and 15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Published Patent

Application JP 10-119705 in view of Zettel. This rejection is respectfully traversed.

As stated in the foregoing with respect to claim 1, JP '705 fails to disclose or even suggest compressing first and second ends of the cylindrical molded product in the axial direction, "such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of the molded product closer to the first end and a radial pressure loss of the axially lower half portion of the molded product closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 8.

Further, as stated in the foregoing with respect to the Section 102 rejection, Zettel fails to disclose or even suggest the step of "compressing a first end of a cylindrical molded product having a uniform thickness defined by an outer diameter and an inner diameter thereof in an axial direction thereof," and the step of "compressing a second end of the cylindrical molded product in the axial direction, such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of the molded product closer to the first end and a radial pressure loss of the axially lower half portion of the molded product closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate

of 250 liters/minute under the atmosphere of 20°C," as recited in claim 8.

Therefore, even assuming, *arguendo*, that JP '705 and Zettel can be combined, JP '705 in view of Zettel fails to disclose or even suggest the steps of compressing the first end of the molded product, and compressing the second end of the molded product, "such that an absolute value of a difference between a radial pressure loss of the axially upper half portion of said coolant closer to the first end and a radial pressure loss of the axially lower half portion of said coolant closer to the second end is adjusted to be 10 mmH_2O or less at a flow rate of 250 liters/minute under the atmosphere of 20°C," as recited in claim 8.

Claim 15, dependent on claim 1, is allowable at least for its dependency on claim 8.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

Conclusion

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and objections, and allowance of the pending claims are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully

requested to contact Maki Hatsumi (Reg. No. 40,417) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____ (Reg. #40,417)
for Terrell C. Birch, #19,382

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

TCB:MH/mh:pjh
0425-0871P

Attachment(s): Seven (7) replacement sheets of corrected formal drawings